

Road Alteration - Woodbine Avenue

Date: March 30, 2021

To: Toronto and East York Community Council

From: Acting Director, Traffic Management, Transportation Services

Wards: Ward 19, Beaches-East York

SUMMARY

As the Toronto Transit Commission (TTC) operates a transit service on Woodbine Avenue, City Council approval of this report is required.

Following extensive public consultation, City Council approved the installation of cycle tracks and bicycle lanes on Woodbine Avenue, between O'Connor Drive and Queen Street East on October 5, 2016.

Transportation Services staff have been requested by the local Councillor to provide a design solution to address concerns of traffic congestion, delays and sightline issues on Woodbine Avenue, between Kingston Road and Gerrard Street East. Specifically, staff have been requested to prepare a revised design to provide an additional northbound travel lane while maintaining cycling infrastructure and off-peak parking.

While staff do not support the proposed design, every effort has been made to achieve the objectives requested and mitigate risks to the best of our ability. The design remains sub-standard in a number of areas and therefore, staff does not support the proposed alteration of Woodbine Avenue.

RECOMMENDATIONS

The Acting Director, Traffic Management, Transportation Services recommends that:

1. City Council not authorize the alteration of Woodbine Avenue, between Kingston Road and the CNR underpass, approximately 137 meters north of Gerrard Street East, generally as shown on "Drawing No. 421G-3853, 421G-3854 and 421G-3855, dated March 2021", attached to the "March 30, 2020 Road Alteration-Woodbine Avenue" report from the Acting Director, Transportation Services, Toronto and East York District.

FINANCIAL IMPACT

There is no financial impact resulting from the adoption of the recommendation in this report.

If City Council amends the recommendation in this report and authorizes the alteration of Woodbine Avenue, between Kingston Road and the CNR underpass, approximately 137 meters north of Gerrard Street East, the estimated cost associated with the amendment is \$185,000. Funding would be subject to availability and competing priorities within the Transportation Services 2021 Capital Budget.

DECISION HISTORY

Toronto City Council, at its meeting on October 5, 2016, adopted Item PW15.10, which approved the installation of northbound and southbound cycle tracks and bicycle lanes on Woodbine Avenue, from O'Connor Drive to Queen Street East. The Council decision can be found at:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2016.PW15.10>

Public Works and Infrastructure Committee, at its meeting on September 22, 2015, received a staff report PW 7.5 “Ten Year Cycling Network Plan: Project Update and 2016 Implementation Program”, which included a list of on-street bikeway projects. The projects recommended for detailed design and consultation in 2016 with implementation in 2016/2017 included cycling facilities on Woodbine Avenue from O'Connor Drive to Queen Street East, Corley Avenue from Woodbine Avenue to Brookside Drive, and Norway Avenue from Woodbine Avenue to Elmer Avenue:

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.PW7.5>

COMMENTS

Protected bicycle lanes (cycle tracks) and bicycle lanes on Woodbine Avenue were installed in the summer of 2017. Generally, one traffic lane in each direction and dedicated left-turn lanes at major intersections were included with on-street parking available for 24/7 on the east side. Two northbound traffic lanes were included from Queen Street East to Kingston Road and approaching O'Connor Drive, where space was available.

Since installation, residents and the local Councillor raised concerns of traffic congestion, delays, and sightlines for motor vehicle traffic on Woodbine Avenue, between south of Gerrard Street East and Kingston Road. Staff undertook a traffic study and made several adjustments to parking limits on Woodbine Avenue to address visibility and safety issues at intersections.

In 2019, the local councillor organized two public consultation events where residents raised concerns of traffic congestion. It should be noted that before and after traffic counts were conducted on Woodbine Avenue. The average motorist vehicle travel time on Woodbine Avenue for northbound and southbound traffic was compared during the peak and off peak periods. The afternoon peak hours experience a moderate increase in travel time of up to 2.5 minutes, and the morning and midday peak hours experienced minimal change of approximately 1 minute of travel time. Subsequently, the local councillor requested City staff to investigate the issue and come up with a design solution addressing traffic capacity while maintaining bicycle lanes in both directions and accommodating off-peak and overnight permit parking on the east side of Woodbine Avenue.

Existing Conditions

Woodbine Avenue is a two-way north/south Major Arterial roadway, with a daily traffic volume of 20,000 vehicles. Prior to the installation of bicycle lanes, the average number of cyclists during a 12 hour daytime was 70 to 80 in 2016, and after the installation of cycling infrastructure the average number of cyclists was between 220 and 230 in 2018. The posted speed limit is 50 km/hr, municipal sidewalks are located on both sides of the road and in between Gerrard Street East and Kingston Road, the pavement width is approximately 12.8 metres wide. Toronto Transit Commission (TTC) operates the "92 Woodbine South" bus route with 9-10 minute headways during peak hours.

South of Gerrard Street East, the existing roadway configuration includes a single vehicle travel lane in each direction and dedicated left-turn lanes at the signalized intersections. Cycling facilities include 1.7 metre northbound cycle track with 0.5-0.7 metre buffer beside the cycle track, and a southbound 1.5-1.7 metre bicycle lane.

Currently, on-street parking spaces are available 24/7 on the east side of Woodbine Avenue for a maximum duration of 3 hours and overnight parking is permitted from 12:01 a.m. to 7:00 a.m. On-street parking is separated from the northbound cycle track with a 0.5-0.7 metre painted buffer and flexible in-road posts.

Requested Changes

Staff reviewed the request to accommodate a second northbound lane during the peak periods which will be used for off-peak/overnight permit parking while maintaining dedicated bicycle facilities in both directions. The major design considerations include:

- Safety of all road users including maintaining separation for cycle track in the northbound direction;
- Accommodate operation of Toronto Transit Commission (TTC) buses; and
- Accommodate off-peak parking in the northbound curb lane.

While staff do not recommend the following lane configuration on Woodbine Avenue due to the substandard lanes, safety concerns and geometric issues. This is the best possible design to meet the requested objectives between Kingston Road and Gerrard Street East within 12.8 metre pavement width, as shown in the sketch below:

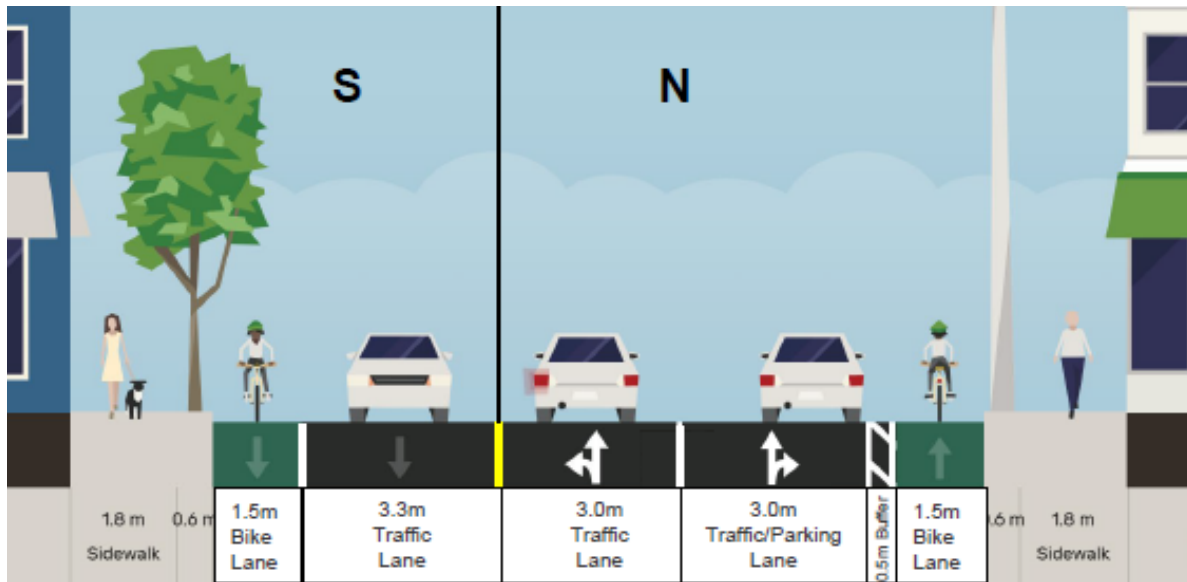


Figure 1: Artist representation of revised lane configuration on Woodbine Avenue

The above design includes a second northbound travel lane which would provide additional northbound capacity during the afternoon peak period and would be used for morning, off-peak, and overnight permit parking. It also includes a reduced painted buffer beside northbound cycle track which would minimize the risk of parked cars "dooring" people cycling. The installation of flexible posts within the buffer lane would enhance and better delineate the separation between the travel and bicycle lanes. Bicycle lanes in both directions would be slightly narrowed but will be within the minimum City standard for bicycle lanes. The 3.3 metre travel lane in the southbound direction is the minimum width for a Toronto Transit Commission (TTC) bus route. The northbound curb lane would be narrowed to 3.0 metres (0.3 metres below the standard minimum width).

The revised lane configuration map is included in Attachment 1.

Toronto Transit Commission (TTC) buses operate in the curb lane, however, it should be acknowledged that it will not be possible for northbound TTC buses to remain fully within their travel lane. The 0.5 metre buffer space adjacent to the parking lane would provide space for TTC buses (including overhanging mirror) to operate completely outside the northbound cycle track but not fully within their lane. During the morning peak, off-peak, and overnight hours, TTC buses would operate within the westerly northbound curb lane which is 3 metres (0.3 metres below standard as mentioned above) and may encroach into the easterly northbound traffic lane when parking is permitted.

If despite staff's recommendation, City Council decides to proceed with the attached design, staff recommend a reduced speed limit from 50km/h to 40km/h due to the sub-standard lane widths, limited separation between motor vehicles and bicycles and sub-standard geometric design. This would encourage motorists to travel slower reducing any potential collision impacts to traffic and improve safety for people walking and cycling.

In addition to the above, it is also recommended that an assessment of the signal timing operation at the intersection of Woodbine Avenue and Gerrard Street East be conducted to determine the optimal signal timing for the revised lane configuration at the intersection.

Potential Safety, Geometric, and Traffic Capacity Issues

A notable aspect of this design change is the relocation of the northbound taper/merge lane from its existing location 115 metres north of Kingston Road to approximately 75 metres north of Gerrard Street East. The location of the overhead CN rail line pillar and retaining wall contributes to geometric design constraints north of Gerrard Street East. There is currently insufficient room to implement an appropriate taper length to merge traffic from two lanes of travel back to one. For a roadway with a speed limit of 50 km/h, the recommended taper length is 115 metres. The geometry of the roadway permits the installation of a 50.5 metre taper which does not provide sufficient acceleration and merge opportunity.

The vertical grade north of Gerrard Street East also reduces a driver's visibility of the lane ending. Queue spillover into the Woodbine Avenue and Gerrard Avenue East intersection would be expected, resulting in the obstruction of east/west traffic along Gerrard Street East; and, reduced opportunity for northbound motorists to transition safely from the terminated northbound curb lane.

The reduced taper and lateral shift could result in increased sideswipe and rear end collisions. Poor lane alignment, lateral shift and poor visibility of the far-side of the intersection could result in head-on collisions between southbound left-turning vehicles and northbound through vehicles. The above risks of the proposed design cannot be fully mitigated due to the constrained roadway width and topography of Woodbine Avenue north of Gerrard Street East.

The revised design will also require the removal of the dedicated northbound left-turn lane at Woodbine Avenue and Gerrard Street East, and as a result, the northbound left lane becomes a shared through/left-turn lane. As such, the traffic capacity through the intersection will not double with the addition of a second travel lane. Since this lane will now be shared, when a vehicle is waiting to turn left, traffic traveling through the intersection would need to wait behind the left turning vehicle.

Additionally, there has not been any previous installation in the City of Toronto of on-street bicycle lanes with time restricted parking located between the motor vehicle travel lane and the bicycle lane. This arrangement will need to be closely monitored for cycling safety.

Conclusion

While staff do not support the above design, every effort has been made to achieve the objectives requested and mitigate risks. The design remains sub-standard in a number of areas and therefore, staff does not support the recommended changes.

Notwithstanding, should City Council choose to proceed with this design, staff recommends the installation of traffic monitoring cameras to better enable monitoring of the revised configuration.

The Ward Councillor has been advised of the recommendation of this staff report.

CONTACT

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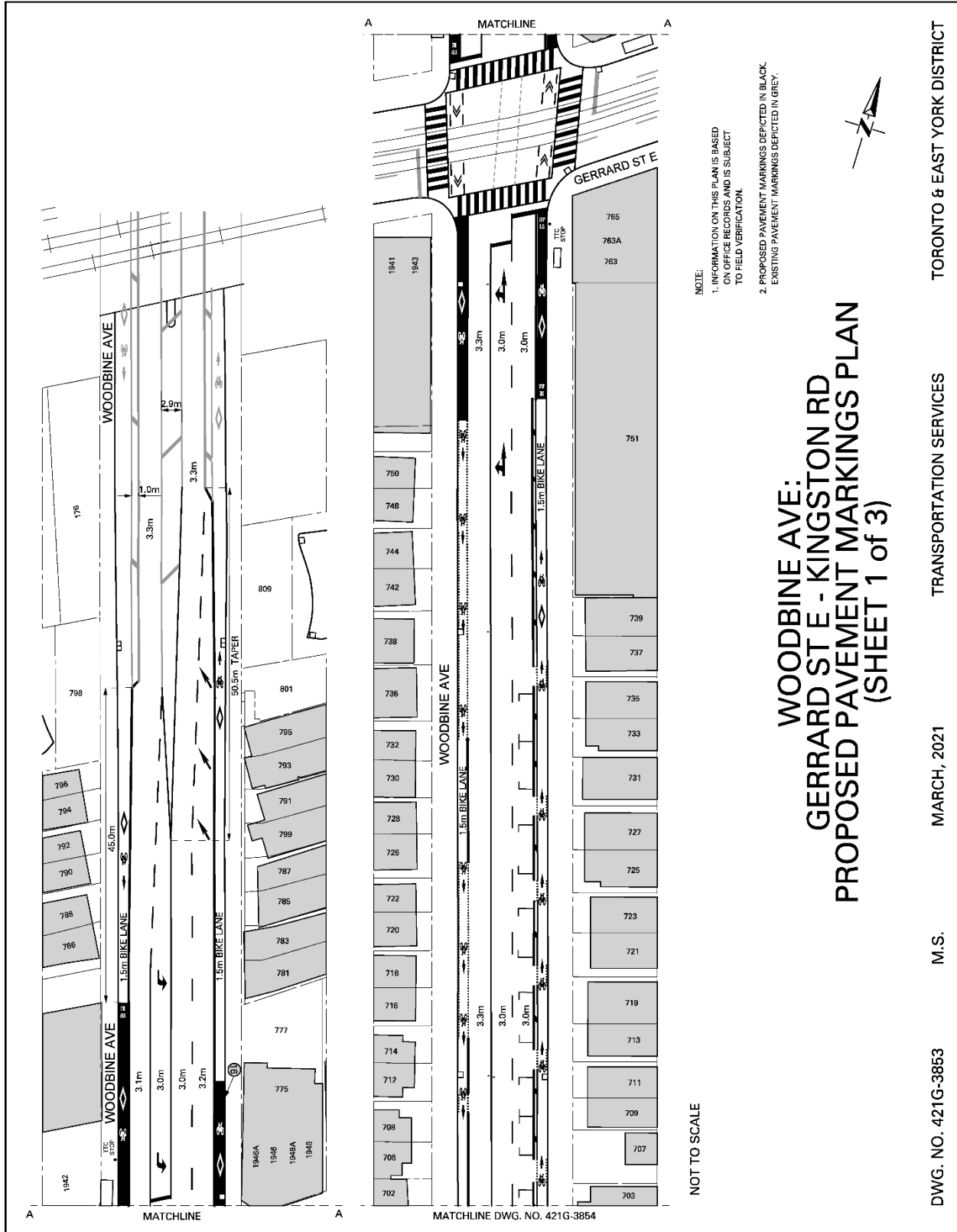
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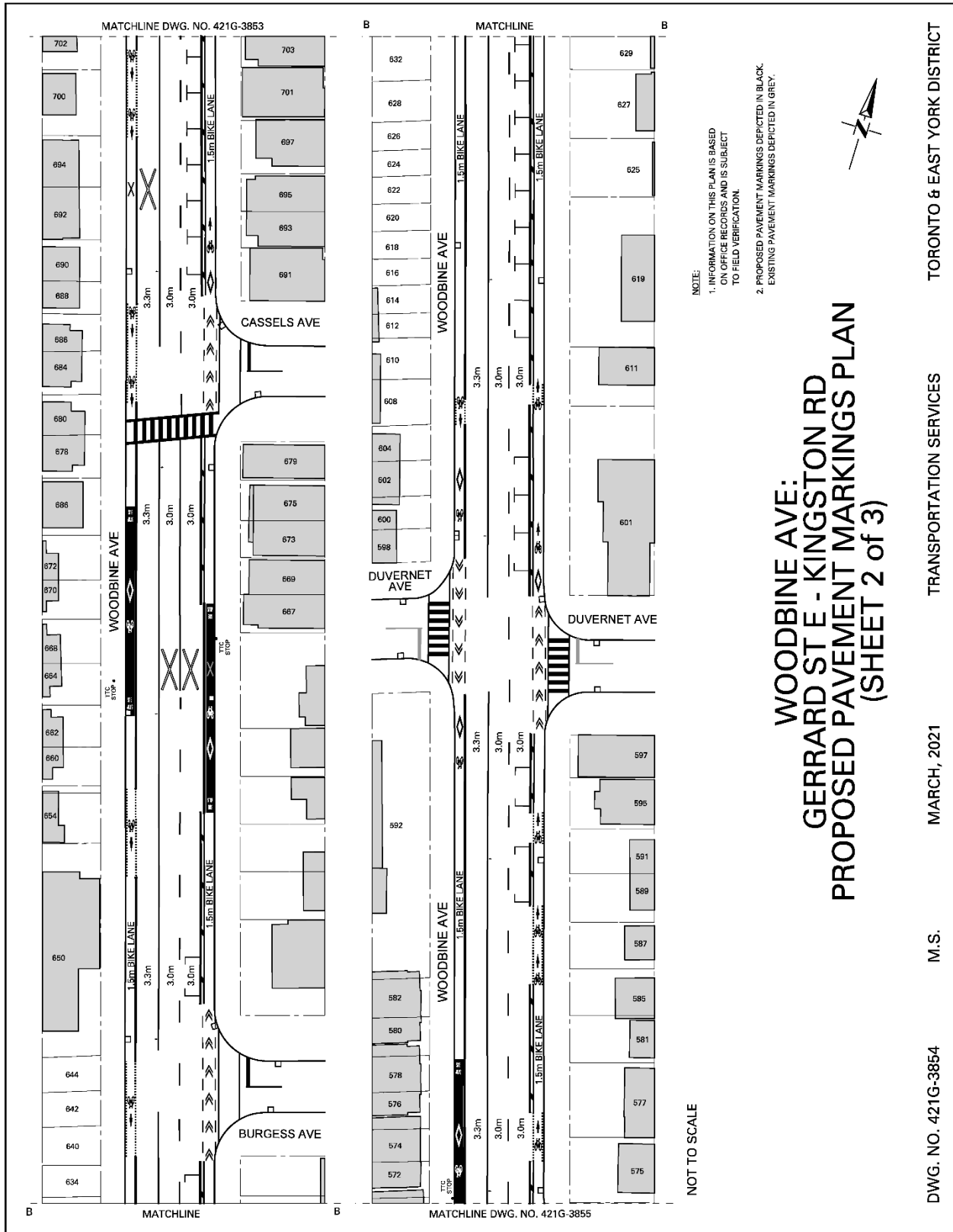
Roger Browne, M.A.Sc., P. Eng.
Acting Director, Traffic Management, Transportation Services

ATTACHMENTS

Attachment 1: Map - Woodbine Ave: Gerrard St. E.-Kingston Rd, Proposed Pavement Markings Plan

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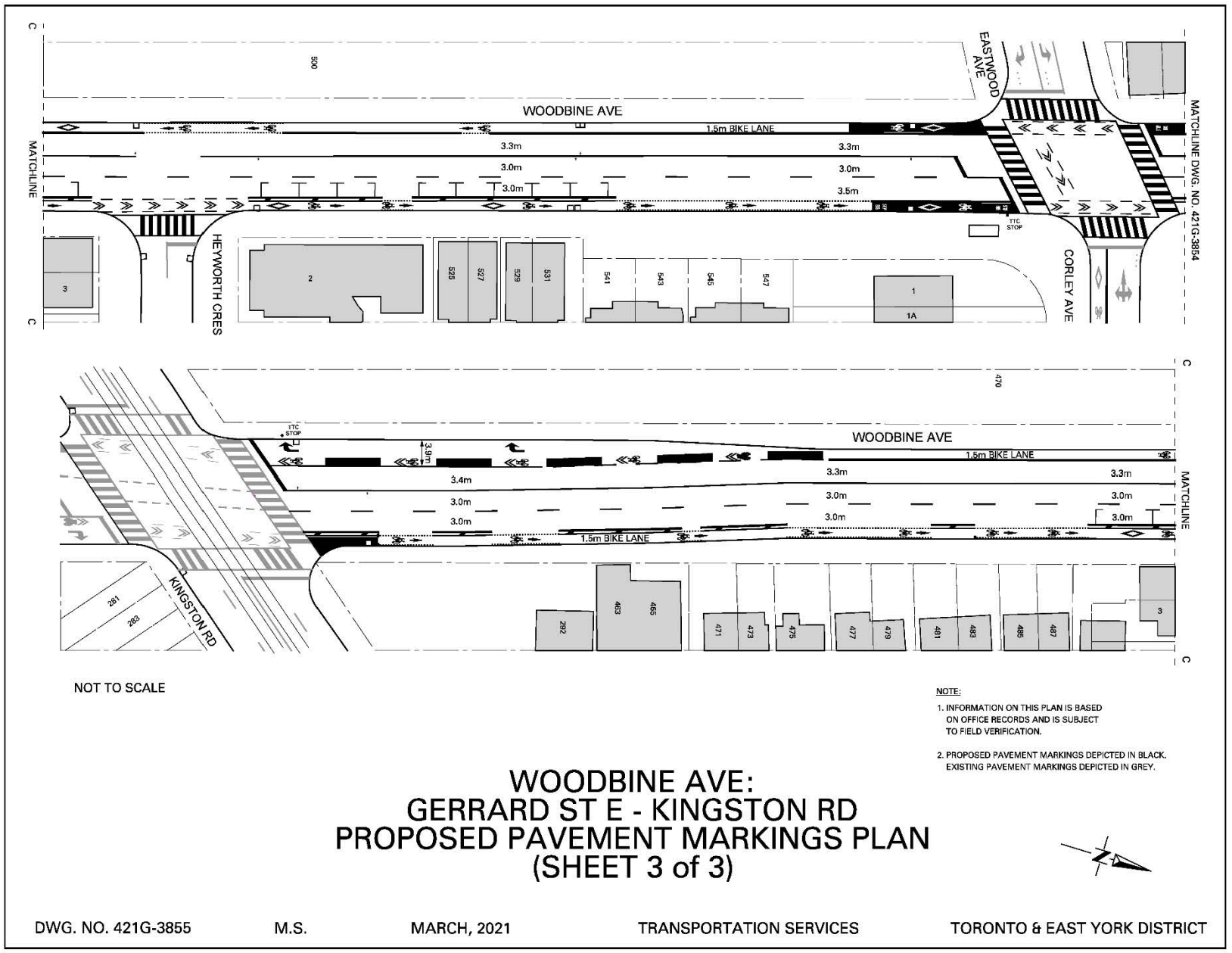


NOTE:
 1. INFORMATION ON THIS PLAN IS BASED ON OFFICE RECORDS AND IS SUBJECT TO FIELD VERIFICATION.
 2. PROPOSED PAVEMENT MARKINGS DEPICTED IN BLACK. EXISTING PAVEMENT MARKINGS DEPICTED IN GREY.

**WOODBINE AVE:
 GERRARD ST E - KINGSTON RD
 PROPOSED PAVEMENT MARKINGS PLAN
 (SHEET 2 of 3)**

NOT TO SCALE

DWG. NO. 421G-3854 M.S. MARCH, 2021 TRANSPORTATION SERVICES TORONTO & EAST YORK DISTRICT



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